

SRN1
10/031,905 Search Strategy

(FILE 'HOME' ENTERED AT 07:47:31 ON 18 AUG 2004)

FILE 'REGISTRY' ENTERED AT 07:47:44 ON 18 AUG 2004

L1 1 S 9013-18-7

FILE 'MEDLINE, AGRICOLA, CAPLUS, BIOSIS, EMBASE, WPIDS' ENTERED AT
07:48:40 ON 18 AUG 2004

L2 2921 S L1

L3 531 S L2 AND (HUMAN OR SAPIENS)

L4 406 DUP REM L3 (125 DUPLICATES REMOVED)

L5 3 S L4 AND (FACL5 OR ACS5)

L6 0 S (FATTY (W) ACID (W) COENZYME (W) A! (W) LIGASE (W) 5!) OR (AC

L7 29 S (FATTY (W) ACID (W) COENZYME (W) A# (W) LIGASE (W) 5#) OR (AC

L8 17 DUP REM L7 (12 DUPLICATES REMOVED)

L9 6 S L8 AND (HUMAN OR SAPIENS)

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IUBMB Enzyme Nomenclature

EC 6.2.1.3

Common name: long-chain-fatty-acid—CoA ligase

Reaction: ATP + a long-chain carboxylic acid + CoA = AMP + diphosphate + an acyl-CoA

Other name(s): acyl-CoA synthetase; fatty acid thiokinase (long chain); acyl-activating enzyme; palmitoyl-CoA synthase; lignoceroyl-CoA synthase; arachidonoyl-CoA synthetase; acyl coenzyme A synthetase; acyl-CoA ligase; palmitoyl coenzyme A synthetase; thiokinase; palmitoyl-CoA ligase; acyl-coenzyme A ligase; fatty acid CoA ligase; long-chain fatty acyl coenzyme A synthetase; oleoyl-CoA synthetase; stearoyl-CoA synthetase; long chain fatty acyl-CoA synthetase; long-chain acyl CoA synthetase; fatty acid elongase; LCFA synthetase; pristanoyl-CoA synthetase; ACS3; long-chain acyl-CoA synthetase I; long-chain acyl-CoA synthetase II; fatty acyl-coenzyme A synthetase; long-chain acyl-coenzyme A synthetase; FAA1

Systematic name: acid:CoA ligase (AMP-forming)

Comments: Acts on a wide range of long-chain saturated and unsaturated fatty acids, but the enzymes from different tissues show some variation in specificity. The liver enzyme acts on acids from C₆ to C₂₀; that from brain shows high activity up to C₂₄.

Links to other databases: [BRENDA](#), [EXPASY](#), [KEGG](#), [UM-BBD](#), [ERGO](#), CAS registry number: 9013-18-7

References:

1. Bakken, A.M. and Farstad, M. Identical subcellular distribution of palmitoyl-CoA and arachidonoyl-CoA synthetase activities in human blood platelets. *Biochem. J.* 261 (1989) 71-76. [Medline UI: [89374118](#)]
2. Hosaka, K., Mishima, M., Tanaka, T., Kamiryo, T. and Numa, S. Acyl-coenzyme-A synthetase I from *Candida lipolytica*. Purification, properties and immunochemical studies. *Eur. J. Biochem.* 93 (1979) 197-203. [Medline UI: [79169257](#)]
3. Nagamatsu, K., Soeda, S., Mori, M. and Kishimoto, Y. Lignoceroyl-coenzyme A synthetase from developing rat brain: partial purification, characterization and comparison with palmitoyl-coenzyme A synthetase activity and liver enzyme. *Biochim. Biophys. Acta* 836 (1985) 80-88. [Medline UI: [85280527](#)]
4. Tanaka, T., Hosaka, K., Hoshimaru, M. and Numa, S. Purification and properties of long-chain acyl-coenzyme-A synthetase from rat liver. *Eur. J. Biochem.* 98 (1979) 165-172. [Medline UI: [79236369](#)]

[EC 6.2.1.3 created 1961, modified 1989]

Return to [EC 6.2.1 home page](#)

SRNT

	Type	Hits	Search Text	DBs	Time Stamp
1	BRS	0	(FACL5 or ACS5) and Yamashita.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:33
2	BRS	2	20030073129.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/17 14:36
3	BRS	2	6639063.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:26
4	BRS	100	FACL5 or ACS5 or (acyl-CoA adj synth\$ adj 5!) or (fatty adj acyl-coA adj ligase) or 6.2.1.3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:36
5	BRS	63	l2 and (human or sapien\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:38
6	BRS	0	(tang.in. or hillman.in. or bandman.in. or yue.in. baughn.in. or lal.in. or aina.in. or shah.in. or azimzai.in.) and l2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:45
7	BRS	469	((fatty adj acid adj coenzyme adj A! adj ligase adj 5!) or (acyl-CoA adj synthetase))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:45
8	BRS	6	(tang.in. or hillman.in. or bandman.in. or yue.in. baughn.in. or lal.in. or aina.in. or shah.in. or azimzai.in.) and l5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/08/18 07:45